

Sponsored Research Services
 141 Lomb Memorial Drive
 Suite 2000 • Louise Slaughter Building
 Rochester, NY 14623-5608
 Phone: 585-475-7985 • Fax: 585-475-7990
<http://www.research.rit.edu>

TO: Board of Trustees, Administration, and Faculty
 ROCHESTER INSTITUTE OF TECHNOLOGY

FROM: Marjorie K. Zack, Director

DATE: July 29, 2003

RE: Annual Report for FY03

The year ending June 30 saw a 20% increase in the number of proposal writers and 46% more proposals submitted, plus a 5.6% increase in the total value of awarded grants and contracts. The number of projects awarded increased by 33%, with the average value of funded projects declining to \$46,680 from last year's high of \$60,554. One hundred eighty-five RIT faculty and staff wrote 969 proposals, demonstrating that we are achieving our aim of involving more people in seeking external funding. RIT received \$31,275,443 in awards, and we have two large proposals still pending from the State of New York. The Assembly and Senate have both pledged \$4 million to fund the Center for Biotechnology Education and Training, but we are awaiting a final contract. As we execute agreements for these and other pending projects, we will update these figures. If you would like a copy of our final report, which will be available in September, please send an email to srs@rit.edu.

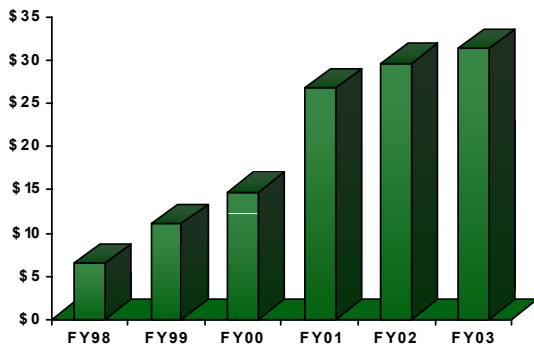


Table 1. Value of Proposals Funded (\$M)

Purpose and Source of Funding

For the last four years, we have tracked the purpose of awarded projects. This cumulative information (FY00 to FY03) shows how external funding serves a variety of needs at the university:

| | | |
|------------------------|--------------|-----|
| Curriculum Development | \$ 1,960,360 | 2% |
| Service | \$ 5,985,451 | 6% |
| Student | \$ 6,242,516 | 6% |
| Outreach | \$10,520,451 | 10% |
| Equipment & Facilities | \$11,235,377 | 11% |
| Training | \$14,590,801 | 14% |
| Research | \$51,395,665 | 51% |

FY03 awards were made by sponsors as follows:

| | | |
|--------------|--------------|-----|
| Federal | \$19,294,395 | 61% |
| NY State | \$ 4,866,484 | 16% |
| Corporations | \$ 3,819,140 | 12% |
| Foundations | \$ 2,688,619 | 9% |
| Other | \$ 606,805 | 2% |

Did you notice our new email - srs@rit.edu? The three initials stand for the new name of our office, Sponsored Research Services (SRS). Under the leadership of associate provost Donald Boyd, the office of Grants, Contracts, and Intellectual Property that was established in 1998 has morphed into two separate entities - Sponsored Research Services and the Technology Licensing Office. The words, "Research Services" more clearly portray our role at RIT as a supportive infrastructure for all phases of funding - source identification, proposal development, and management of awards. The words also reflect the growing importance of research and research compliance at RIT, including human subject research, export control, and conflict of interest. The scope of SRS can best be seen at <http://www.research.rit.edu>.

The theme of this annual report is *RIT's Special Brand of Education*. On page three, you will learn about grants that have been proposed or awarded that extend our educational offerings. These projects are one reason RIT's participation with grants has grown - we are speaking to our strengths by promoting our educational content or methodology.

| College or Unit | Awarded | % RIT Total |
|-----------------|-------------|-------------|
| CIMS | \$9,010,717 | 29% |
| Science | \$7,044,972 | 23% |
| NTID | \$4,439,374 | 14% |
| Engineering | \$3,815,236 | 12% |
| Univ-wide Units | \$2,980,393 | 10% |
| Imaging A&S | \$2,211,509 | 7% |
| Applied S&T | \$1,123,876 | 4% |
| Liberal Arts | \$ 331,934 | 1% |
| Computing | \$ 317,432 | 1% |

Table 2. Awarded Grants and Contracts by College or Unit

RIT Millionaires

At the fifth annual Principal Investigators Reception in February, President Simone announced inductees into the *RIT Million Dollar Principal Investigators Club*. These individuals have received \$1 million or more in sponsored funding since the turn of the 21st Century:

| | |
|---------------|--|
| Donald Boyd | Associate Provost for Outreach Programs Division of Academic Affairs |
| Dianne Brooks | Associate Dean and Director National Technical Institute for the Deaf |
| James DeCaro | Professor and Director National Technical Institute for the Deaf |
| Guy Johnson | Professor and Director College of Applied Science & Technology |



Batting 1000! Honorees

Having a bit of fun, President Simone recognized ten faculty and staff whose first attempts at proposal writing were successful.

| | |
|-----------------|---|
| Kevin Bierre | Golisano College of Computing & Info Sciences |
| Paula Brown | National Technical Institute for the Deaf |
| Margaret Ferber | Finance & Administration |
| Susan Foster | National Technical Institute for the Deaf |
| Edward Hensel | Kate Gleason College of Engineering |
| Robert Manning | College of Liberal Arts |
| Maria Rubino | College of Applied Science & Technology |
| Michael Savka | College of Science |
| David Suits | College of Liberal Arts |
| Sean Sutton | College of Liberal Arts |

New York State & Federal Government Directed Funding

The Office of Government and Community Relations works with state and federal legislators to secure funding for key projects at RIT, including research programs and capital facilities. As mentioned earlier, New York State committed \$8 million to RIT for the Center for Biotechnology Education and Training through the Senate's Gen*NY*sis program and the Assembly's RESTORE NY program, although executed contracts are still pending. However, we did receive \$400,000 for work with the remanufacturing industry, \$50,000 for manufacturing outreach, \$100,000 for interpreter training, and \$50,000 in targeted member items for programs such as the Faces of Change conference and the RIT student ambulance. Even though the state budget has passed, specific funding awards to RIT for FY04 are in limbo. While there is a lump sum allocation, the decision on how these funds will be distributed will be made in the fall.

From the federal government, we received \$6 million in the FY03 appropriations process, including \$4 million for our Defense Modernization and Sustainment program; \$1,350,000 for continuing research on wildfires; \$422,000 for training dislocated workers for new careers in biotechnology; and \$225,000 for a new initiative in fuel cell design for sustainability.

Washington Comes to RIT



A goal of RIT - involvement with federal agencies that can utilize and fund our expertise - has been achieved this year, in reverse. Several on-campus visits significantly strengthened RIT's government partnerships.

- John Phillips, director of science at the **Central Intelligence Agency**, spent a full day last August meeting with RIT leadership, faculty and touring several labs. Bob Meriscsko, CIA senior scientist, has visited twice and in May proposed a student-faculty research fund. A \$250,000 proposal for that project is pending.

- As part of her September visit to RIT, Caroline Wardle, program director at the **National Science Foundation**, presented a Liberty Hill breakfast on the new Information Technology workforce. Throughout the day she talked with deans, department heads and faculty about effective proposal writing.

- RIT's National Center for Remanufacturing and Resource Recovery in CIMS hosted a successful October program review with the **Office of Naval Research** and the **US Marine Corp**, who came to see progress on the Light Armored Vehicle where NCR³ is applying asset health management and material aging technology.

- In a visit sponsored by the Public Policy Department in Liberal Arts, Craig Reed, special assistant to the Secretary of the **Department of Energy**, visited in October to discuss national energy policy with faculty, students, and the general public.

- Ramon Rodriguez, **Department of Education** liaison officer for the National Technical Institute for the Deaf, was on campus twice for meetings of the National Advisory Group of NTID. He also conducted an on-site evaluation of the Northeast Technical Assistance Center, a \$5 million grant to RIT from the department.

- Rob Zitz, director of **Innovision** at the **National Imagery and Mapping Agency**, visited RIT in April, a visit followed by an RIT trip to Washington to meet NIMA technical staff. NIMA funds a large project in the Center for Imaging Science Lab for Advanced Spectral Sensing, and other projects are in the works.

- The **Government Printing Office**, with Public Printer of the US Bruce James at the helm of a technical visit in May, discussed several projects with the Golisano College and the Sloan Printing Industry Center in CIAS. Golisano faculty continued the discussion about possible joint projects in a June visit to GPO.

Marschark Receives Shannon Award from NIH

In a surprise call this winter, NTID professor Marc Marschark was informed that the National Institute on Deafness and Other Communication Disorders would grant him a James A. Shannon Director's Award. This prestigious award is given to researchers whose work is meritorious and innovative, but falls outside of an existing NIH funding program. Marc will use the \$100,000 grant to study interpreting, for which he also has two NSF grants.

RIT's Special Brand of Education

RIT's Special Brand of Education

Curricular Innovations

RIT's reputation for providing an outstanding education for its students is grounded in curricular innovations of the faculty. Many of these faculty apply for and receive external funding for projects conducted at RIT and later disseminated nationally or globally. This section reviews several of the educational innovations that were proposed or funded during this last year.

■ **Best Practices.** NTID professor **Susan Foster** received two grants from the US Dept. of Education to develop, test, and disseminate materials that will enable postsecondary faculty to modify their teaching behaviors in order to remove barriers to access for deaf and hard-of-hearing students. The project will result in a website of project materials, a CD ROM of best practices for special services administrators at postsecondary institutions, and widespread dissemination of this information.

■ **Optoelectronics Consortium.** CAST professor **S. Manian Ramkumar** received funding from the Society of Manufacturing Engineers Education Foundation for the Consortium for Optoelectronics Packaging Education (COPE), composed of industrial and academic partners who examine competency gaps in the optoelectronics industry. COPE also identifies technical competencies in optoelectronics at universities in Upstate New York and Ontario, Canada, and provides continuing education for employees in the optoelectronics industry.

■ **Bioinformatics Workshops.** At the request of the National Science Foundation, RIT is offering a summer workshop for bioinformatics educators. Now in its second year, RIT, under the leadership of biology professor **Gary Skuse**, shares our experiences with developing bioinformatics courses and curricula with educators nationwide. By nature, bioinformatics is interdisciplinary, so this workshop draws faculty from many disciplines: biological sciences, computer science, information technology, chemistry, mathematics and others.

■ **Visualize This!** CIAS professor **Marla Schweppe** submitted a proposal to NSF to develop curriculum in "visual thinking" specifically for students in science, technology, engineering and math. Students will develop methods and metrics for evaluating visual ideas, gain skills to enable them to develop visuals of their own work, and mobilize creative thinking in science, technology, engineering and math students.

■ **Entrepreneurship.** Associate provost **Don Boyd** and CAST professor **Carl Lundgren** wrote a proposal to the National Collegiate Inventors and Innovators Alliance that focuses on the development and generation of intellectual property by RIT students. The project will promote innovation across RIT's colleges and result in a competitive review process for student projects to be supported through the RIT Student Incubator (RITSI), which is located at the RIT High Tech Incubator.

Involving Students in Research Projects

A major reason to seek external funding is to provide support and educational experiences for RIT students. At the high school, undergraduate, masters, and PhD levels, RIT faculty spent many hours this past year developing and administering projects that involve students. This article details a few of these projects.

■ **Holography.** With funding from the Academy of Applied Science, high school students are carrying out technological research and development in holography, a field that includes optics, lasers, imaging, and photonics. This project is led by CIAS professor **Terry Kessler**.

■ **Tracking Eyes.** Funding from the Naval Research Laboratory provides for basic research and further development in the area of eye-target search patterns. Graduate research assistants work with professor **Jeff Pelz** in the Center for Imaging Science to better understand how people search cluttered scenes for specific items or targets.

■ **Women's Success in IT.** Professors **Elizabeth Lawley** and **Tona Henderson** received NSF funding to study attrition and factors that contribute to women students persisting in their study of Information Technology. Assisting on the project is a graduate student who will interview students and analyze data.

■ **Co-op Researcher.** Funding was awarded to physics assistant professor **Scott Franklin** by the American Chemical Society to design experiments that provide the first quantitative characterization of connected networks formed by large aspect-ratio granular materials. An undergraduate co-op student is conducting research on this topic.

■ **Undergraduate Research Experiences.** Microelectronics department chair and professor **Santosh Kurinec** received continued NSF funding in concert with Ohio State University to supervise laboratory research projects for several undergraduates this summer. The students are working on a research project that includes developing a new process for silicon-based tunnel diodes and fabricating chips in the microelectronics lab.

■ **Helping the Police.** **John Klofas**, chair of the Criminal Justice Department, is working with the Rochester Police Department (RPD) to understand customer satisfaction. As part of a Department of Justice grant to RPD, RIT students will help in the survey design, implementation, analysis, and reporting. They will also participate in focus groups with community members to assess perceptions of police services.

■ **Studies in National Parks.** **James Winebrake**, chair of the Public Policy Department in Liberal Arts, received continuation funding for the University-National Parks Energy Partnership Program (UNPEPP) from the National Parks Service. The goal of UNPEPP is to partner university students and faculty with national parks to assist in energy efficiency, renewable energy, and resource conservation.

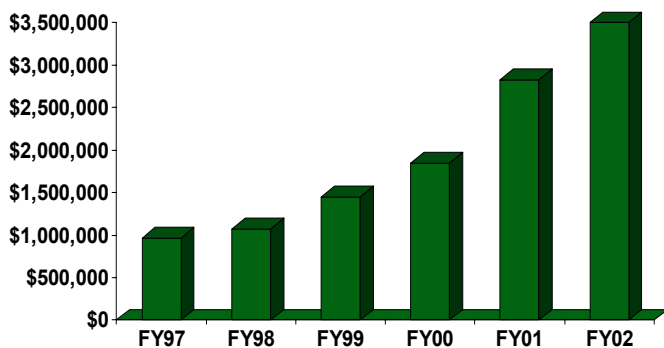


Table 3. Facilities and Administrative Costs Recovered



After Seven Years at the Helm . . .

In 1996, when the university determined it needed a comprehensive policy for university-owned patents, trademarks, and copyrights, the Provost turned to then Academic Senate President Bruce Oliver to establish a committee that would craft a policy for RIT consistent with its vision of conducting applied research and technology. A subsequent committee chaired by Oliver created the RIT Intellectual Property Policy, adopted by the Board in 1997.

Oliver, professor of Accounting and director of the Center for Business Ethics in the College of Business, assumed the chair of the Intellectual Property Policy (IPP) Committee in 1998. He served five consecutive years as chair, but decided this summer it was time to turn the reins over to new leadership. "I've thoroughly enjoyed being part of our effort to capture, protect, and license intellectual property created by the RIT community. This demonstrates we are fulfilling our broader mission to advance society through our intellectual discoveries and creations," said Oliver.

During Oliver's tenure as chair, Technology Review Panels were instituted; the RIT Creator's Award was initiated and twice conferred; and the Inventors Dinner was established with the intent it would be held every other year to honor inventors. Additionally, the committee set-up operational procedures for matters relating to patenting, copyrights, and licensing, including accepting outside technologies into the RIT portfolio and distribution of licensing revenue.

NEW The PI Institute

"Each year our office holds seminars for people to learn about writing and managing grants," explained Marjorie Zack. "But these are hit-and-miss and sometimes a year is over and we realize we did not offer the number of high-caliber training sessions that our researchers and principal investigators (PIs) need. We decided to systematize our training and organized seminars in such a way as to be a recognizable and on-going training program." So began the PI Institute this past year. Seven seminars covered topics from finding funding to research methodologies to collaborating with companies (see www.research.rit.edu). In its inaugural year, the PI Institute exceeded its participation goal by 25%, with 156 PIs attending.

Facilities and Administrative Costs Recovered

Each year grants and contracts return funds to the university to cover facilities and administrative expenses that are incurred while conducting these sponsored projects. These facilities and administrative costs are calculated using a formula that RIT negotiates with the Department of Health and Human Services. For FY02, RIT calculated \$3,581,468 in total facilities and administrative costs.

Economic Development at RIT

The *Upstate Alliance for Innovation*, a three-university NSF-funded project headed by RIT, held two important retreats this year: March's Entrepreneurs Next Wave for 40 would-be corporate giants and June's gathering of 100 people to accelerate regional universities' efforts to create a culture for economic growth. Planned in conjunction with the Greater Rochester Enterprise, the retreat resulted in three actions: 1) Upstate universities will document their research and training assets; 2) Rochester's higher education community will articulate what they contribute to local development efforts; and 3) Rochester's universities and colleges will consider adding economic development to their missions.

In addition to the *Alliance*, RIT is conducting many projects that contribute to our region's economic health. Each year, quite a few students work with local companies on specific R&D problems. For instance, this year eight students worked with a local health-care firm on projects related to work-flow and web design (PI: Golisano professor Jeff Lasky). Other faculty conduct research projects that advance industry, such as Kate Gleason College professors Bruce Smith and Satish Kandlikar who are funded by Sematech, a consortium of semiconductor companies. In FY03, the Center for Integrated Manufacturing Studies (CIMS PI: Nabil Nasr) helped 116 companies on 266 projects; 70% of the firms are located in NYS.

The Infotonics Center of Excellence

This industry-university-government partnership was created to bring together world-class industrial and university scientists to bridge the gap between basic research and product manufacturing using photonics. FY03 was the first year Infotonics awarded research grants with funding from NASA and the Dept of Energy. RIT faculty won six awards, some with other universities (CUNY, UR, UB) as the lead and some where RIT took the lead.

CAST professor Ramkumar and a start-up are developing packaging for photonics, micro-optics and micro-electrical mechanical systems. Alan Raisanen, associate director of the Semiconductor Microelectronics Fabrication Lab, purchased equipment that adds new capabilities to make unique devices. Raisanen, Mustafa Abushagur (Kate Gleason College) and Ken Chin (IT Collaboratory) are working with the Univ at Buffalo studying charge transfer dyes in sensors. Engineering professors Bill Grande and Jim Moon have partnered with Cornell Univ to characterize an enabling micro-machining process. Two projects with the Univ of Rochester will lead to integrated sensor microsystems (PIs: engineering professors Karl Hirschman and Dan Phillips) and a micro-energy harvester (Kate Gleason College scientist Mike Potter).